

ABSTRACT OF THE DISCLOSURE

An array of SOAs integrated in a semiconductor chip 1 is optically coupled to an array of waveguides 12 arranged on a substrate 10 of a passive device by mounting the semiconductor chip 1 on the substrate 10 to form a hybrid optical assembly. The semiconductor chip 1 is manufactured with a redundant array of SOAs. In a first aspect, the array of SOAs A1, A2, etc are arranged with a pitch equal to the predetermined pitch at which the array of waveguides 12 are arranged on the substrate 11 divided by an integer greater than 1. In a second aspect, the SOA A, B, C are arranged at the same predetermined pitch at which the array of waveguides 12 are arranged, but the number of SOAs A, B, C in the array on the semiconductor chip 1 is greater than the number of waveguides 12 arranged on the substrate 10. The substrate 10 is provided with grooves 14 which define alignment surfaces 17 and 18 corresponding to alignment surfaces 6 and 5 formed on the semiconductor chip 1 for relative alignment of the SOAs with the waveguides 12.